

B. Remarks/Arguments

Applicant herein responds to the Office Action ("OA") of October 2, 2003. First, Applicant extends its thanks to the Examiner for conducting a thorough search and review of the prior art as well as a thorough review of the presently pending application.

Further, in the OA, the Examiner has indicated that claims 27-29 are allowed. Applicant thanks the Examiner for finding such claims allowable. Also, the Examiner objected to claim 10 for an informality. Applicant has corrected such informality in the present amendment and therefore requests the Examiner to remove such objection. Also, the Examiner has rejected claims 1-15 and 18-32 under 35 U.S.C. 102 and/or 35 U.S.C. 103 in light of various art of record. Applicant respectfully traverses all such rejections.

In particular, Applicant notes that the Examiner rejected claims 1, 7-10, 13, 21, and 23 under 35 U.S.C. 102(e) as being anticipated by Doolan, U.S. Patent No. 5,764,995 (hereafter, "Doolan"). Also, the Examiner rejected claims 2-6, 9, 22, 30-32 under 35 U.S.C. 103(a) as being unpatentable over Doolan in view of Cheah et al. of Computer Communications 20 (1997), (title: *Design and Implementation of an MMS environment on ISODE*) page 1354-1364 (hereafter, "Cheah"). Further, the Examiner rejected claims 11-12, 8, 19-20, and 24-26 under 35 U.S.C. 103(a) as being unpatentable over Doolan in view of Cheah and Kimball et al., U.S. patent number 5,859,959 (hereafter "Kimball").

The Examiner noted that Doolan and Cheah were both cited in Applicant's Information Disclosure Statement. Applicant respectfully contends that the Examiner should appreciate that Applicant believes that meaningful distinctions exist between the claims as originally filed (and as further amended herein) and between the teachings of Doolan and Cheah. Applicant contends such distinctions render the present claims patentable in view of Doolan, Cheah and Kimball. However, since the Examiner has rejected all of the claims in view of Doolan, with or without the combination of Cheah and/or Kimball, Applicant herein, primarily, responds to the Doolan

rejection. Applicant contends that if the rejected independent claims, namely claims 1, 18, 21, 30 and 32 are patentable in view of Doolan, then the teachings of Cheah and/or Kimball are moot absent a showing by the Examiner of the relevance of such references by themselves and/or in combination with prior art other than Doolan.

Specifically, Applicant contends that Doolan teaches a centralized control system, whereas the pending claims in the present application are directed towards a distributed control system. Applicant herein amends claims 1, 18, 21, 30 and 32 to further set forth this distinction, i.e., that the present claims are directed towards a distributed control system and not towards a centralized control system.

As the Examiner most likely appreciates, under a centralized control system, such as that taught by Doolan, a centralized controller or "single CMIP/CMISE network manager can manage a network composed of a variety of network legacy elements from multiple vendors" (*See Doolan Abstract*). In the Doolan, centralized controlled network, thousands of network elements and a few hundred managers exist. (Doolan, col. 2, ll. 13-15.) The network elements are associated with agent processes that "perform operations on the network elements in response to the manager. Thus, a manager invokes management operations onto an agent to manipulate a legacy network element." (Doolan, col. 2, ll. 29-35.) Further, the network includes managers, which "are the supervisory or control systems which are responsible for operations, administration, maintenance and provisioning for the network. Managers are typically located in a central office." (Doolan, col. 2, ll. 36-39.)

Thus, the background section in Doolan sets the framework in which the gateway or translation function disclosed in Doolan's invention operates and functions. Applicant contends such framework is one of a centralized network wherein a handful of "managers" communicate with and control network elements. Or, stated differently, the network elements perform specific functions only under the supervision and control of the managers. Further, in Doolan, network elements do not communicate with each other and, thus, control can not be distributed; control

must be centralized in the managers. Thus, Doolan teaches translating, via an agent and a gateway, those messages sent from a manager to a network element in a centralized control system.

Applicant contends that the teachings of Doolan (i.e., a centralized control system) do not apply to a distributed control system because of the numerous inherent distinctions between a centralized and a distributed control system. Applicant notes that in the present invention distributed control is provided by mapping messages to a common network protocol stack (such as TCP or UDP and IP). This is done so that any control device in the distributed control system may communicate with any other control device in the system using an Ethernet connection.

In a centralized system, however, such as that taught by Doolan, the use of a common protocol stack is not required nor taught, because the managers need only be able to talk to those agents with whom it is connected and compatible. Doolan does not teach that managers communicate with each other. Nor is such communication necessary, because control of certain network elements is centralized. In Doolan, control is not distributed.

As such, the system taught by Doolan simply would not work in a fieldbus or distributed control system implementation. Hence, Doolan teaches away from a distributed control system. One skilled in the art would not reasonably look to a centralized control system, such as Doolan, when desiring to implement a distributed control system, such as that taught by the Fieldbus specifications. The Examiner must appreciate that centralized and distributed control systems are inherently different and the teachings of one do not lend themselves to the teachings of another.

For example, if one attempted to implement the Doolan system, as depicted in Fig. 3 of Doolan, in a distributed control system, Applicant contends that every device would require a gateway, an agent and a manager. In effect, the number of devices on the network would quadruple. Simply stated, Figure 3 in Doolan teaches that any manager (i.e., any controller)

requires an agent and a gateway to control any network element. Further, it provides that the manager is not a network element, that is, the manager is not the control device.

Further, Applicant contends that Doolan does not teach how any manager (i.e., any controller) communicates with any other manager to provide distributed control. Under Doolan, as shown in Fig. 1 and 3, managers communicate only with agents. As such, Applicant contends that Doolan is directed solely and specifically towards translating messages between a manager (i.e., a controller) through an agent (which itself does not provide translation functions), through a gateway (which translates) to a network element responsive to the translated message. The presently claimed invention simply does not require this rigid of a structure.

In summary, Applicant contends that Doolan's teaching of one embodiment for translating messages communicated between a manager and a dedicated network element in a centralized control system simply does not read upon Applicant's present invention.

For the foregoing reasons and other reasons not set forth herein at this time, Applicant respectfully contends that Doolan does not teach each and every element of the pending claims. Therefore, Applicant contends that each and every claim is patentable of the prior art of record.

Regarding Cheah, Applicant also notes that the Examiner has relied upon Cheah as teaching an Ethernet network. Just as Doolan is fundamentally different than Applicant's claimed invention in its fundamental design and practical implementation, Applicant contends that Cheah is also fundamentally different than Applicant's distributed control system invention. In particular, Applicant notes that Cheah teaches another embodiment of a centralized control system, wherein messages generated by a controller (such as a Doolan "manager") are communicated over an Ethernet connection through a gateway to a device (i.e., a "network element"). In essence, the Cheah controller effectively acts as the Doolan manager, and the Cheah device effectively acts as the Doolan network element. As such, Cheah teaches another

embodiment of a centralized control system. It does not teach a distributed control system, as set forth in the presently pending claims.

Regarding Kimball, Applicant contends that Figure 5 of Kimball teaches an implementation wherein switching between networks is accomplished at a network hub. Kimball does not teach, mention or suggest a High Speed Ethernet core within an apparatus in a distributed control system which includes a redundancy entity, for sending and receiving diagnostic information, and a redundancy entity local interface through which the device access agent communicates with the redundancy entity. Applicant contends that Kimball does not teach, mention or suggest these element, because Kimball is also not directed towards a distributed control system. Further, Kimball does not include, teach, mention or suggest, that an apparatus should include a redundancy entity that maintains a network status table indicating the diagnostic status of a distributed control system to select operational one of a plurality of redundant network interfaces based on a network status table. Kimball does not provide such teaching because the network switching in Kimball occurs at a network hub, not in a network device. In a centralized control system, such as those taught by Doolan or Cheah, centralized switching is a desirable feature. In a distributed control system, centralized switching (i.e., at a hub) is inefficient and defeats the very benefit of distributed control. Namely, every device operates independent of other devices in maintaining its connections with such other devices.

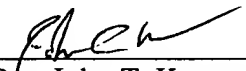
For the foregoing and other reasons, Applicant contends that Doolan, Cheah and Kimball, alone or in combination, do not teach each and every element of each of the pending claims in the present application. Therefore, Applicant respectfully requests the Examiner to expedite allowance of all of the pending claims.

Should the Examiner have any questions regarding this Response and Amendment which may be resolved via telephone, the Examiner is invited to contact Applicant's attorney, John T. Kennedy, at (303) 260-6362.

PATENT
Attorney Docket No. 5319.00
Express Mail Label No. EV 410058831 US

Dated: January 30, 2004

Respectfully submitted,
Dorsey & Whitney LLP


By: John T. Kennedy
Attorney for Applicant
USPTO Reg. No. 42,717
Customer No. 20686

C